00-SM5-142
(ATI-0009)

REMARKS

Claims 1-21 and 32-36 were pending and remain for consideration in the present amendment. The Examiner is requested to enter this amendment pursuant to the provisions of 37 CFR §1.116(b). The amendment to the independent claims clearly defines over the cited patents and entry is requested for at least this reason. Alternatively, it is requested that the amendment be entered because it places the claims in better form for appeal.

Independent Claims 1 and 32 have amended to add the feature "wherein the fluid communication between the inlet manifold assembly and the first sidewall opening of the process chamber is free from a baffle plate." Support can be found in the last sentence of paragraph [0044] as well as in Figures 3, and 10-12.

Reconsideration and allowance of the claims is respectfully requested in view of the amendments and the following remarks.

First Claim Rejection Under 35 U.S.C. §103(a)

Claims 1-3, 6, 7, 10-14, 16, 18, 19, 21, and 32-35 stand rejected under 35 U.S.C. §103(a), as allegedly unpatentable over Hoke in view of U.S. Patent No. 5,370,738 to Watanabe et al. (hereinafter "Watanabe"). Applicants respectfully traverse.

Independent Claims 1 and 32 are directed to reactor assemblies comprising, *inter alia*, wherein the fluid communication between the inlet manifold assembly and the first sidewall opening of the process chamber is free from a baffle plate.

Hoke is generally directed to a metalorganic vapor deposition reactor vessel. The reactor vessel generally includes a chamber having a top surface that is substantially parallel to a substrate disposed within the chamber. A baffle plate is disposed adjacent to an inlet to increase uniformity and decrease turbulence of a vapor stream flowing through the chamber. A block is disposed within the chamber, which is positioned between the baffle plate and a substrate support assembly.

Watanabe is generally directed to a compound semiconductor vapor phase epitaxial device. The device employs a rather complicated inlet structure for admitting different gas compositions, e.g., H_2, compound including Group III elements + H_2, and compound including Group V elements + H_2. The Group II and Group V compound are combined such that the gas flows across a crystal substrate at an angle (see Watanabe, Figure 4).

In making a Section 103 rejection, the Examiner bears the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1998). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). Further, even assuming that all elements of an invention are disclosed in the prior art, an Examiner cannot establish obviousness by locating references that describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would have impelled one skilled in the art to do what the patent applicant has done. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. Int. 1993). The references, when viewed by themselves and not in retrospect, must suggest the invention. *In Re Skoll*, 187 U.S.P.Q. 481 (C.C.P.A. 1975).

A prima facie case has not been established because the cited references, individually or in combination, fail to teach or suggest a reactor assembly comprising, *inter alia*, wherein the fluid communication between the inlet manifold assembly and the first sidewall opening of the process chamber is free from a baffle plate. As discussed above, Hoke describes a baffle plate adjacent to the inlet area (see also Hoke, Cols. 7 and 8). The baffle plate positioned adjacent to the inlet area is required so that a desired laminar flow pattern for Hoke's reactor vessel can be established. Because of this, the shape of the inlet area is characterized as insignificant since pressure build up results from the use of the baffle plate to prevent the gas from streamlining along a center of a rectangular chamber. In this manner, a laminar gas flow pattern is achieved.

> During growth, vapor enters the reactor vessel 10 via the reactor inlet 14 at a high flow rate, approximately 10 liters/minute for example. At such flow

> rates, pressure builds up in the inlet area 15, behind the gas diffusing baffle 12, resulting in gas flow through all of the plurality of holes 12 a of the gas diffusing baffle 12 thus providing a substantially laminar gas flow.

(Hoke, Col. 8, ll. 1-9)

> Thus, the baffle is disposed adjacent to but spaced from the inlet 14 of the reactor vessel 10. In applications where the width of the chamber 11 is increased due to an increase in the substrate 63 size, but the size of the inlet 14 remains the same, the streamlining effect will be more significant, emphasizing the importance of such a baffle 12.

(Hoke, Col. 8, ll. 22-28)

As such, any combination of references with Hoke would require the use of a baffle plate adjacent to the inlet portion. Thus, Hoke and/or Watanabe fail to establish a prima facie case of obviousness since Applicants' inlet end portion is free from a baffle plate.

Moreover, it is submitted that there is no motivation to combine Watanabe with Hoke. The Examiner is believed to be picking and choosing elements from the references instead of considering the invention as a whole as is required by the statute. Watanabe teaches and suggests multiple flow passageways, wherein one of the gas passageways provides an axial gas flow into the chamber so that the combined gas flow traverses the plane of the substrate at an angle. Since the combined gas flow traverses the plane of the substrate at an angle, one would to be motivated to combine this reference with art directed to laminar flow processes.

In view of the foregoing, a prima facie case of obviousness has not been established against independent Claims 1 and 32. Since those claims dependent thereon include the same features, among others, dependent Claims 2, 3, 6, 7, 10-14, 16, 18, 19, 21 and 33-35 are also patentable over the cited references.

Other Claim Rejections Under 35 U.S.C. §103(a)

Claims 4, 5, 8, 9, 15, 17, 20, and 36 stand rejected under 35 U.S.C. §103(a), as allegedly unpatentable over Hoke and Watanabe in varying combinations of references

including U.S. Patent No. 6,383,330 to Raaijmakers et al., an STIC translation of JP02-15221 to Mikio Takagi et al., U.S. Patent No. 5,228,501 to Tepman et al., U.S. Patent No. 4,839,145 to Gale et al., U.S. Patent No. 5,190,592 to Chazee et al., U.S. Patent No. 6,355,108 to Won et al. Applicants respectfully traverse.

A prima facie case has not been established because the cited references, individually or in combination, fail to teach or suggest a reactor assemblies comprising, *inter alia*, wherein the fluid communication between the inlet manifold assembly and the first sidewall opening of the process chamber is free from a baffle plate. As discussed above, the primary reference relied upon by the Examiner, Hoke, requires the use of a baffle plate adjacent to the inlet portion. Thus, any combination of Hoke with any of the secondary references would necessarily require the use of a baffle plate adjacent to the inlet portion. For at least this reason, a prima facie case of obviousness has not been made.

Moreover, the fundamental lack of soundness of the Examiner's position is further highlighted by the fact that the Examiner has found it necessary to rely on eight different references in so many alternative rejections. For example, if the Examiner had a soundly based position on the issue of obviousness, it would not be necessary for him to rely, in shotgun fashion, on so many references. In this regard, the comments of the Court in *Ball & Roller Bearing Co. v. F.C. Sanford Mfg. Co.*, 297 Fed. 163, 167 (2nd Cir. 1924) seem particularly pertinent. The Court stated that :

> It seems necessary to apply to patent litigation from time to time the maxim that one cannot make omelets of bad eggs—no matter how many are used. One good reference is better than 50 poor ones; and the 50 do not make the one any better.

Other Courts have agreed and notice that the reliance on a large number of references is persuasive evidence of invention. For these reasons, it is believed that the Examiner has improperly relied on hindsight in making the rejections under 35 USC 103 (a).

In view of the foregoing, the rejections of Claims 4, 5, 8, 9, 15, 17, 20, and 36 are requested to be withdrawn.

00-SM5-142
(ATI-0009)

It is believed that the foregoing remarks fully comply with the Office Action and place the application in condition for immediate allowance, which action is earnestly solicited.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' Attorneys.

Respectfully submitted,

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